

AMENDMENTS TO THE CLAIMSRECEIVED  
CENTRAL FAX CENTER

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**1-2. (Cancelled)**

**3. (Currently Amended)** A data transmission method for communication between first and second transmission devices transmitting/receiving a data frame including a transmission timer value indicating a total frame time of data frames subsequent thereto by using a single transmission path, comprising the steps of:

sequentially transmitting n-data-frames (where n is an arbitrary natural number) each said frame including the transmission timer value set to indicate (n - k) frame time (where k is an arbitrary natural number showing sequential order of transmission) from said first transmission device;

detecting, at said second transmission device that has received one or more of the data frames each said frame including said transmission timer value, the transmission timer value included in an error-free data frame among the received data frames;

managing, at said second transmission device, an elapse of the total frame time of the subsequent data frames by using the detected transmission timer value and managing an elapse of a time period by using a predetermined initial value when no transmission timer value is detected, for confirming that said transmission path is available; and

transmitting one or more data frames in sequence from said second transmission device when said transmission path is confirmed being available.

**4. (Previously Presented)** The data transmission method according to claim 3, wherein

said transmission path is implemented by radio transmission in an arbitrary frequency band.

**5. (Currently Amended)** The data transmission method according to claim 3, wherein

said predetermined initial value is determined as the maximum time required for error-free transmission of all of said data frames.

6. **(Previously Presented)** The data transmission method according to claim 3, wherein

in said step of detecting said transmission timer value, the transmission timer value is detected from every error-free data frame among the data frames received by said second transmission device; and

in said step of confirming that said transmission path is available, an elapse of the total frame time of the subsequent data frames is started to be managed every time said transmission timer value is detected.

7. **(Currently Amended)** A data transmission method for communication between first and second transmission devices transmitting/receiving a data frame including a transmission timer value indicating a total frame time of data frames subsequent thereto via a relay device by using a single transmission path, comprising the steps of:

sequentially transmitting  $n$ -data-frames (where  $n$  is an arbitrary natural number) each said frame including the transmission timer value set to indicate  $(n - k)$  frame time (where  $k$  is an arbitrary natural number showing sequential order of transmission) from said first transmission device;

detecting, at said relay device that has received one or more of the data frames each said frame including said transmission timer value, an error in each of the received data frames;

detecting, at said relay device, the transmission timer value included in an error-free data frame among the received data frames;

setting, at said relay device,  $m$ -data frames (where  $m$  is a natural number not more than  $n$ ) in which no error was detected as data frames to be transmitted;

setting, at said relay device, the transmission timer value for each of the data frames set as the data frames to be transmitted so as to indicate  $(m - k)$  frame time;

managing, at said relay device, an elapse of the total frame time of the subsequent data frames by using the detected transmission timer value for confirming that said transmission path is available; and

transmitting one or more data frames in sequence from said relay device to said

second transmission device when said transmission path is confirmed being available.

8. **(Previously Presented)** The data transmission method according to claim 7, wherein

said transmission path is implemented by radio transmission in an arbitrary frequency band.

9. **(Previously Presented)** The data transmission method according to claim 7, wherein

in said step of detecting said transmission timer value, the transmission timer value is detected from every error-free data frame among the data frames received by said relay device; and

in said step of confirming that said transmission path is available, an elapse of the total frame time of the subsequent data frames is started to be managed every time said transmission timer value is detected.

10-11. **(Cancelled)**

12. **(Previously Presented)** A data transmission system for communication between first and second transmission devices transmitting/receiving a data frame including a transmission timer value indicating a total frame time of data frames subsequent thereto by using a single transmission path, wherein

said first and second transmission devices each comprise:

a receiving portion for receiving the data frame including said transmission timer value;

a transmission timer acquiring portion for acquiring the transmission timer value included in the data frame received by said receiving portion;

a transmission timer for suspending transmission for a frame time indicated by the transmission timer value acquired by said transmission timer acquiring portion, and when none of said timer values is acquired, suspending transmission for a time indicated by a predetermined initial value;

a transmitting frame constructing portion for constructing a data frame to be transmitted including the transmission timer value so set as to indicate the total frame time of the data frames subsequent thereto; and

a transmitting portion for transmitting the data frame to be transmitted constructed by said transmitting frame constructing portion, and

said second transmission device, when received one or more of the data frames transmitted from said first transmission device, confirms, by said transmission timer provided therein, that said transmission path is available through an elapse of the time of suspending transmission, and then transmits one or more of the data frames to be transmitted constructed by said transmitting frame constructing portion in sequence.

**13. (Previously Presented)** The data transmission system according to claim 12, wherein

said transmission path is implemented by radio transmission in an arbitrary frequency band.

**14. (Currently Amended)** The data transmission system according to claim 12, wherein

said predetermined initial value is determined as the maximum time required for error-free transmission of all of said data frames.

**15. (Previously Presented)** A data transmission system for communication between first and second transmission devices transmitting/receiving a data frame including a transmission timer value indicating a total frame time of data frames subsequent thereto via a relay device by using a single transmission path, wherein

said first and second transmission devices each comprise:

a first receiving portion for receiving the data frame including said transmission timer value;

a first transmission timer acquiring portion for acquiring the transmission timer value included in the data frame received by said first receiving portion;

a first transmission timer for suspending transmission for a frame time

indicated by the transmission timer value acquired by said first transmission timer acquiring portion, and when none of said timer values is acquired, suspending transmission for a time indicated by a predetermined initial value;

a first transmitting frame constructing portion for constructing a data frame to be transmitted including the transmission timer value so set as to indicate the total frame time of data frames subsequent thereto; and

a first transmitting portion for transmitting the data frame to be transmitted constructed by said first transmitting frame constructing portion, said relay device comprises:

a second receiving portion for receiving the data frame including said transmission timer value;

an error detecting portion for detecting an error in the data frame received by said second receiving portion;

a received frame analyzing portion for setting the data frame in which no error was detected by said error detecting portion as a data frame to be transmitted;

a second transmission timer acquiring portion for acquiring the transmission timer value included in an error-free data frame among the received data frames;

a second transmission timer for suspending transmission for a frame time indicated by the transmission timer value acquired by said second transmission timer acquiring portion,

a second transmitting frame constructing portion for constructing a data frame to be transmitted including the transmission timer value so set as to indicate the total frame time of the data frames subsequent thereto; and

a second transmitting portion for transmitting the data frame to be transmitted constructed by said second transmitting frame constructing portion, and

said relay device, when received one or more of the data frames transmitted from said first transmission device, confirms, by said second transmission timer provided therein, that said transmission path is available through an elapse of the time of

suspending transmission, and then transmits one or more of the data frames to be transmitted constructed by said second transmitting frame constructing portion to said second transmission device in sequence.

**16. (Previously Presented)** The data transmission system according to claim 15, wherein

said transmission path is implemented by radio transmission in an arbitrary frequency band.

**17-18. (Cancelled)**

**19. (Previously Presented)** A transmission device for transmitting/receiving a data frame including a transmission timer value indicating a total frame time of data frames subsequent thereto by using a single transmission path, comprising:

a receiving portion for receiving the data frame including said transmission timer value;

a transmission timer acquiring portion for acquiring the transmission timer value included in the data frame received by said receiving portion;

a transmission timer for suspending transmission for a frame time indicated by the transmission timer value acquired by said transmission timer acquiring portion, and when none of said timer values is acquired, suspending transmission for a time indicated by a predetermined initial value;

a transmitting frame constructing portion for constructing a data frame to be transmitted including the transmission timer value so set as to indicate the total frame time of the data frames subsequent thereto; and

a transmitting portion for transmitting the data frame to be transmitted constructed by said transmitting frame constructing portion, and

when received one or more data frames, confirming, by said transmission timer, that said transmission path is available through an elapse of the time of suspending transmission, and then transmitting one or more of the data frames to be transmitted constructed by said transmitting frame constructing portion in sequence.

20. (Currently Amended) The transmission device according to claim 19, wherein said predetermined initial value is determined as the maximum time required for error-free transmission of all of said data frames.

21. (Previously Presented) A relay device for relaying data transmission from a first transmission device transmitting a data frame including a transmission timer value indicating a total frame time of data frames subsequent thereto, to a second transmission device by using a single transmission path, comprising:

- a receiving portion for receiving the data frame including said transmission timer value;

- an error detecting portion for detecting an error in the data frame received by said receiving portion;

- a received frame analyzing portion for setting only the data frame in which no error was detected by said error detecting portion as a data frame to be transmitted;

- a transmission timer acquiring portion for acquiring the transmission timer value included in the data frame received by said receiving portion;

- a transmission timer for suspending transmission for a frame time indicated by the transmission timer value acquired by said transmission timer acquiring portion;

- a transmitting frame constructing portion for constructing a data frame to be transmitted including the transmission timer value so set as to indicate the total frame time of the data frames subsequent thereto; and

- a transmitting portion for transmitting the data frame to be transmitted constructed by said transmitting frame constructing portion, and

- when received one or more data frames transmitted from said first transmission device, confirming, by said transmission timer, that said transmission path is available through an elapse of the time of suspending transmission, and then transmitting one or more of the data frames to be transmitted constructed by said transmitting frame constructing portion to said second transmission device in sequence.